IN THE CLAIMS:

1. (Withdrawn) A furnace for uniformly heating an optical fiber preform in an optical fiber draw tower, said furnace comprising:

a main body;

a sub-body placed coaxially with said main body and having a diameter smaller than said main body; and,

an upper gas feeding section disposed over said main body, wherein said upper gas feeding section includes a first hollow rotary body having at least one slit in the inner surface thereof along the longitudinal direction of an optical fiber and at least one opening extended in the direction of the center, whereby a gas creates non-contact polarization to the optical fiber through said first hollow rotary body.

2. (Withdrawn) The furnace according to Claim 1, further comprising a middle gas feeding section between said main body and said sub-body, wherein said middle gas feeding section includes a second hollow rotary body having at least one slit in the longitudinal direction of the optical fiber.

3. (Withdrawn) The furnace according to Claim 1, further comprising a lower gas feeding section under said sub-body, wherein said lower gas feeding section includes a third hollow rotary body having at least one slit along the longitudinal direction of the optical fiber.

4. (Withdrawn) The furnace according to Claim 1, wherein said slit is linearly extended about the longitudinal direction of the optical fiber.

5. (Withdrawn) The furnace according to Claim 2, wherein said slit is linearly extended about the longitudinal direction of the optical fiber.

6. (Withdrawn) The furnace according to Claim 3, wherein said slit is linearly extended about the longitudinal direction of the optical fiber.

7. (Withdrawn) The furnace according to Claim 1, wherein said slit is inclined at an angle about the longitudinal direction of the optical fiber.

8. (Withdrawn) The furnace according to Claim 2, wherein said slit is inclined at an angle about the longitudinal direction of the optical fiber.

9. (Withdrawn) The furnace according to Claim 3, wherein said slit is inclined at an angle about the longitudinal direction of the optical fiber.

10. (Withdrawn) The furnace according to Claim 1, wherein said slit is spirally provided about the longitudinal direction of the optical fiber.

11. (Withdrawn) The furnace according to Claim 2, wherein said slit is

spirally provided about the longitudinal direction of the optical fiber.

12. (Withdrawn) The furnace according to Claim 3, wherein said slit is spirally provided about the longitudinal direction of the optical fiber.

13. (Currently Amended) An apparatus for cooling an optical fiber drawn from an optical fiber preform in drawing systems mounted to an optical fiber draw tower, said apparatus comprising:

a main body extending~~ed in length~~ in the longitudinal direction of the fiber;~~ and~~

an upper gas feeding section over said main body, wherein said upper gas feeding section includes a first hollow rotary body having ~~at least one slit in the inner surface thereof along the longitudinal direction of the optical fiber and~~ at least one radial passageway for~~opening extended in the direction of the center, whereby a~~ gas ~~creates non-contact polarization to the optical fiber by said first hollow rotary body~~; and

external means for supplying the gas for flow through the passageway, said apparatus being configured to continuously rotate either the external means or said rotary body to cause non-uniform delivery of the gas to the fiber to create a temperature difference to reduce polarization mode dispersion of the fiber.

14. (Currently Amended) The apparatus according to Claim 1~~7~~3, wherein said slit is linearly extended about the longitudinal direction of the optical fiber.

15. (Currently Amended) The apparatus according to Claim 1~~73~~, wherein said slit is inclined at an angle about the longitudinal direction of the optical fiber.

16. (Currently Amended) The apparatus according to Claim 1~~73~~, wherein said slit is spirally provided about the longitudinal direction of the optical fiber.

17. (New) The apparatus according to Claim 13, wherein said rotary body has a radially inner surface and at least one slit in said inner surface along the longitudinal direction of the fiber.